JRC Response to
Consultation on "Ofcom consultation on UK preparations for the World Radiocommunication Conference 2015 (WRC-15).

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Key Points

- JRC considers that Ofcom has a comprehensive and valuable process in place for developing a UK approach to WRC15.
- Ofcom is effective in influencing the European and broader international positions on items of importance to the UK.
- The 1.4 GHz fixed link UHF band (1350-1375 MHz paired with 1492 -1517 MHz) is a valuable asset used by most UK electricity companies for operational communications. It should be protected against surrender to mobile data services unless an equivalent band can be made available in a similar frequency band. The 1500 MHz bands offer valuable propagation characteristics which cannot be supported by the higher frequency microwave bands.
- In setting the Agenda for WRC18, identifying suitable spectrum for utilities' operational communications should be included. The move towards more intelligent utility networks around the world requires spectrum to be harmonised on a global basis to support the populations, industry and commerce of both developed and developing nations.

JRC Response

Q1. Do you have any comments on the mechanism for UK preparation for WRC-15 and the role of Ofcom in this process?

JRC considers that Ofcom has a comprehensive and valuable process in place for developing a UK approach to WRC15, and that Ofcom is effective in influencing the European and broader international positions on items of importance to the UK.

Q2. Do you agree with the prioritisation of the agenda items, as shown in Annex 6, and if not why?

JRC is content with the prioritisation of Agenda Items contained in Annex 6.

Q3. Do you agree with Ofcom's general approach on WRC-15 agenda item 1.1?

JRC agrees with Ofcom's general approach, but in looking at bands for IMT on an individual basis, it is possible to overlook other services which, whilst flexible in the precise frequency bands in which they operate, nevertheless need to be located in a given part of the radio spectrum because of the essential propagation characteristics of those parts of the radio spectrum.

Q4. In view of the recent developments on the 1492-1518 MHz and 5925-6425 MHz bands, what are your views on the potential identification of these bands for IMT and/or RLAN and on the mobile data applications that could make use of them? How do you believe the sharing with the fixed service and the fixed satellite services could be managed at the national level?

It is difficult to see that fixed services in 1492-1518 MHz band could share with IMT and/or RLAN. It would be more likely that terrestrial fixed services could share with satellite fixed services; or that civil and military services could share the same spectrum.

Q5 For the band 1427 – 1452 MHz, do you agree that it is right to support the further consideration of this band, recognising the Ministry of Defence interest?

With the UK review of use of public spectrum holdings, it appears important that the future of 1350-1400 MHz paired with 1427-1452 MHz and 1492-1517 MHz should be considered as a whole, bearing in mind that these blocks are currently configured and shared differently around Europe, mainly for fixed services (including non-line-of-sight and point-to-multipoint services in some cases). They are a key strategic resource in most European countries for delivering fixed services over long or partially obstructed paths to support critical communications.

Q6. For the band 1452 – 1492 MHz, which is already subject to a harmonisation measure within CEPT, do you agree that this band be supported for an IMT identification at WRC-15?

Utilities acknowledge that this band has been identified for IMT, but recommend that other services should be able to access it where and when not used for IMT. It must be recognised that utilities used this band extensively for fixed services prior to 1990 when clearance started to accommodate other services. Because these services never materialised, the band has been under utilised for 25 years representing a significant loss of use of a very valuable spectrum band. Regulators should learn from previous mistakes.

Q7. Recognising the UK plans to release spectrum in the 3400 – 3600 MHz band, coupled with the binding European Commission Decision (for electronic communications services) in the bands 3400 – 3600 MHz and 3600 – 3800 MHz, do you agree that these bands should be supported for both a co-primary mobile allocation and IMT identification?

JRC has no comment on this proposal.

Q8. Noting that there are a number of countries that strongly oppose the inclusion of the 3800 – 4200 MHz band, do you agree that we should support the longer term consideration of this band for potential mobile broadband use?

JRC has no comment on this proposal.

Q9. **Noting that there is currently limited international support for a co-primary mobile allocation in the band 2700 – 2900 MHz, do you think that we should continue to support this band at WRC-15?**

JRC has no comment on this proposal.

Q10. **Do you agree that the 5350 – 5470 MHz and 5725 – 5925 MHz bands could provide important additional capacity for Wi-Fi and similar systems? If so, and noting the need to protect both earth observation satellites and radar systems, do you agree that sharing solutions should be considered at WRC-15?**

JRC has no comment on this proposal.

Q11. **Do you agree that we should oppose a co-primary mobile allocation at WRC-15 for the band 470 – 694 MHz?**

JRC observes that the broadcasting service in this band serves mainly – perhaps exclusively now - fixed receivers with external antennas, and that all the services delivered terrestrially are also simulcast by satellite. If there is pressure to find more spectrum for mobile services below 3 GHz, and intense pressure to find spectrum below 1 GHz for services which struggle to operate above this threshold because of the special propagation characteristics of spectrum in these bands, the case for retaining exclusive allocations for services which can be delivered in other part of the spectrum and are accessible over multiple other media – fixed and mobile data networks plus fixed satellite - must be carefully examined.

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Q22. **Do you agree that the UK should not support a proposal for additional UHF spectrum for maritime on-board communications and that narrower channels will help to increase capacity?**

JRC, as spectrum holder for some of the UK assigned spectrum which has to share with maritime on-board communications channels, supports the UK position; especially that these channels should not be designated as 'safety-of-life' communications.

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Q43. **Are there any other possible agenda items you wish to see addressed by future WRCs?**

JRC would like to see **'Utility Radio Operations'** as an agenda item at WRC-18.

The increasing demands for resilient communications to support the safety, security, sustainability and affordability of electricity supply is stimulating a requirement for a **'utility radio service'** to support the operation of utility networks, comprising electricity, gas and water.

Utilities desire a resolution from WRC18 to identify '**Utility Radio Operations'** (URO) on a similar basis to the way in which Public Protection and Disaster Relief (PPDR) was recognised in Resolution 646 at WRC03. While it is unlikely that a common global band could be identified by WRC18, the resolution should list specific frequency bands and ranges that governments should consider when undertaking their national planning for URO. The Resolution should recommend that countries should use the harmonized bands identified for use in each region for utility radio operations, taking into account national and regional requirements.

Electricity Grids around the world are being modernised to adapt to the need to accommodate more diverse and distributed sources of energy in response to global electrification schemes and a migration to lower carbon economies.

The pace of change is being forced by governments rather than usual market mechanisms, requiring a rapid increase in telecommunications as applied to grid control.

At the same time, across all continents, and between continents, interconnectors are being constructed to link regional electricity, gas and water grids. Electricity and gas grids deliver the benefits of sharing energy between markets, but also makes individual countries more vulnerable to major power interruptions through uncontrolled interactions between different electricity grids.

Although utilities use a number of different radio services, both self-provided and public networks, the key services which would be involved in this initiative would be currently designated as fixed and mobile services. [Mainly terrestrial, although some aeronautical and maritime services are also used by utilities to support operations.]

Background

A. JRC Ltd is a wholly owned joint venture between the UK electricity and gas industries specifically created to manage the radio spectrum allocations for these industries used to support operational, safety and emergency communications. JRC also represents gas and electricity interests to government on radio issues.

B. JRC manages blocks of VHF and UHF spectrum for Private Business Radio applications, telemetry & telecontrol services and network operations. JRC created and manages a national cellular plan for coordinating frequency assignments for a number of large radio networks in the UK.

C. The VHF and UHF frequency allocations managed by JRC support telecommunications networks to keep the electricity and gas industries in touch with their network assets and field engineers throughout the country. The networks provide comprehensive geographical coverage to support the operation, installation, maintenance and repair of plant in all weather conditions on a 24 hour/365 days per year basis.

D. JRC's Scanning Telemetry Service is used by radio based System Control and Data Acquisition (SCADA) networks, which control and monitor safety critical gas and electricity industry plant and equipment throughout the country. These networks provide resilient and reliable communications at all times to unmanned sites and plant in remote locations to maintain the integrity of the UK's energy generation, transmission and distribution.

E. JRC co-ordinates wind turbine placements with fixed utility radio links to minimise the risk of interference from wind turbines into critical radio links.

F. JRC provides technical support to the European Utility Telecoms Council (EUTC) and chairs their spectrum group. JRC heads the EUTC delegation in European Commission workshops relating to radio spectrum and telecommunications issues. JRC also participates in a number of regional Utility Telecom Council (UTC) meetings in the US, Latin America and Africa.

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19 September, 2014